DOING SCIENCE: THE PROCESS OF SCIENTIFIC INQUIRY		
New Mexico Science Content Standards– Grades 6 - 8		
Science Standards - Grade 6		
Lesson	**Strand and Benchmark**	**Performance Standard**
3, 4	**I – I – I - 1**	Construct appropriate graphs from data and develop qualitative and quantitative statements about the relationships between variables being investigated.
1, 3, 4	**I – I – I - 2**	Examine the reasonableness of data supporting a proposed scientific explanation.
1, 3, 4	**I – I – I - 3**	Justify predictions and conclusions based on data.
1, 3, 4	**I – I – II - 1**	Understand that scientific knowledge is continually reviewed, critiqued, and revised as new data become available.
All lessons	**I – I – II - 2**	Understand that scientific investigations use common processes that include the collection of relevant data and observations, accurate measurements, the identification and control of variables, and logical reasoning to formulate hypotheses and explanations.
2, 3	**I – I – II - 3**	Understand that not all investigations result in defensible scientific explanations.
1, 3, 4	**I – I – III - 1**	Evaluate the usefulness and relevance of data to an investigation.
1, 3, 4	**I – I – III - 2**	Use probabilities, patterns, and relationships to explain data and observations.
2, 3, 4	**III – I – I - 1**	Examine the role of scientific knowledge in decisions (e.g., space exploration, what to eat, preventive medicine and medical treatment).
Science Standards - Grade 7		
Lesson	**Strand and Benchmark**	**Performance Standard**
1, 3, 4	**I – I – I - 1**	Use a variety of print and web resources to collect information, inform investigations, and answer a scientific question or hypothesis.
1, 3	**I – I – I - 2**	Use models to explain the relationships between variables being investigated.
1, 2, 3	**I – I – II - 1**	Describe how bias can affect scientific investigation and conclusions.
All lessons	**I – I – II - 2**	Critique procedures used to investigate a hypothesis.
1, 3, 4	**I – I – II - 3**	Analyze and evaluate scientific explanations.

3, 4	**I – I – III - 1**	Understand that the number of data (sample size) influences the reliability of a prediction.
3, 4	**I – I – III - 2**	Use mathematical expressions to represent data and observations collected in scientific investigations.
1, 3, 4	**I – I – III - 3**	Select and use an appropriate model to examine a phenomenon.
4	**III – I – I – 2**	Analyze how technologies have been responsible for advances in medicine (e.g. vaccines, antibiotics, microscopes, DNA technologies).
3, 4	**III – I – I - 3**	Describe how scientific information can help individuals and communities respond to health emergencies (e.g. CPR, epidemics, HIV, bio-terrorism).
Science Standards - Grade 8		
Lesson	**Strand and Benchmark**	**Performance Standard**
1, 3, 4	**I – I – I - 1**	Evaluate the accuracy and reproducibility of data and observations.
1, 3, 4	**I – I – I - 2**	Use a variety of technologies to gather, analyze and interpret scientific data.
3, 4	**I – I – I - 3**	Know how to recognize and explain anomalous data.
1, 3, 4	**I – I – II - 1**	Examine alternative explanations for observations.
1, 2	**I – I – II - 2**	Describe ways in which science differs from other ways of knowing and from other bodies of knowledge (e.g., experimentation, logical arguments, skepticism).
1, 2	**I – I – II - 3**	Know that scientific knowledge is built on questions posed as testable hypotheses, which are tested until the results are accepted by peers.
3, 4	**I – I – III - 1**	Use mathematical expressions and techniques to explain data and observations and to communicate findings (e.g., formulas and equations, significant figures, graphing, sampling, estimation, mean).
1, 3, 4	**I – I – III - 2**	Create models to describe phenomena.
4	**III – I – I - 1**	Analyze the interrelationship between science and technology (e.g., germ theory, vaccines).
New Mexico Mathematics Content Standards – Grades 6 - 8		
Mathematics Standards - Grade 6		
Lesson	**Benchmark**	**Performance Standard**
3, 4	**1.A.2**	Use equivalent representations for rational numbers (e.g., integers, decimals, fractions, percents, ratios, numbers with whole-number exponents).

3, 4	**1.A.3**	Use appropriate representations of positive rational numbers in the context of real-life applications.
3, 4	**1.B.5**	Explain and perform: whole number division and express remainders as decimals or appropriately in the context of the problem, addition, subtraction, multiplication, and division with decimals, addition and subtraction with integers, and addition, subtraction, and multiplication with fractions and mixed numerals.
3, 4	**1.C.3**	Determine if a problem situation calls for an exact or approximate answer and perform the appropriate computation.
3, 4	**2.C.2**	Create, explain, and use mathematical models such as: Venn diagrams to show the relationships between the characteristics of two or more sets, equations and inequalities to model numerical relationships, three-dimensional geometric models, and graphs, tables, and charts to interpret and analyze data.
3, 4	**5.A.5**	Solve problems by collecting, organizing, displaying and interpreting data.
3, 4	**5.A.6**	Compare different samples of a population with the entire population and determine the appropriateness of using a sample.
3, 4	**5.A.11**	Formulate and solve problems by collecting, organizing, displaying, and interpreting data.
3, 4	**5.B.1**	Choose an appropriate graphical format to organize and represent data.
3, 4	**5.B.4**	Use data samples of a population and describe the characteristics and limitations of the sample.
3, 4	**5.B.5**	Identify different ways of selecting a sample (e.g., convenience sampling, responses to a survey, random sampling) and which method makes a sample more representative for a population.
3, 4	**5.C.2**	Conduct observations, surveys, experiments and/or simulations, record the results in charts, tables, or graphs, and use the results to draw conclusions and make predictions.
3	**5.C.4**	Compare expected results with actual results in a simple experiment.
Mathematics Standards - Grade 7		
Lesson	**Benchmark**	**Performance Standard**
3, 4	**1.A.3**	Use properties of the real-number system to explain reasoning and to formulate and solve real-world problems.
3, 4	**1.B.1**	Add, subtract, multiply, and divide rational numbers (e.g., integers, fractions, terminating decimals) and take positive rational numbers to whole-number powers.
3, 4	**2.A.2**	Represent a variety of relationships using tables, graphs, verbal rules, and possible symbolic notation, and recognize the same general pattern presented in different representations.
3, 4	**5.A.2**	Select and use appropriate representation for presenting collected data and justify the selection.

3, 4	**5.A.8**	Identify and explain the misleading representations of data.
3, 4	**5.A.9**	Collect, organize, and represent data sets that have one or more variables and identify relationships among variables within a data set.
3, 4	**5.B.2**	Know various ways to display data sets (e.g., stem and leaf plot, box and whisker plot, scatter plots) and use these forms to display a single set of data or to compare two sets of data.
3, 4	**5.B.3**	Use the analysis of data to make convincing arguments.
3, 4	**5.B.4**	Use appropriate technology to gather and display data sets and identify the relationships that exist among variables within the data set.
3, 4	**5.B.5**	Use data samples of a population and describe the characteristics and limitations of the sample.
3, 4	**5.C.2**	Analyze data to make accurate inferences, predictions, and to develop convincing arguments from data displayed in a variety of forms.
Mathematics Standards - Grade 8		
Lesson	**Benchmark**	**Performance Standard**
3, 4	**1.B.2**	Perform arithmetic operations and their inverses (e.g., addition/subtraction, multiplication/division, square roots of perfect squares, cube roots of perfect cubes) on real numbers.
3, 4	**1.C.4**	Use real number properties to perform various computational procedures and explain how they were used.
3, 4	**1.C.6**	Select and use appropriate forms of rational numbers to solve real-world problems including those involving proportional relationships.
3, 4	**2.A.1**	Move between numerical, tabular, and graphical representations of linear relationships.
3, 4	**2.A.2**	Use variables to generalize patterns and information presented in tables, charts, and graphs.
3, 4	**5.A.2**	Generate, organize, and interpret real numbers in a variety of situations.
3, 4	**5.A.3**	Organize, analyze, and display appropriate quantitative and qualitative data to address specific questions including: frequency distributions, plots, histograms, bar, line, and pie graphs, diagram and pictorial displays, and charts and tables.
3, 4	**5.A.6**	Develop an appropriate strategy using a variety of data from surveys, samplings, estimations, and inferences to address a specific problem.
3, 4	**5.B.2**	Generate, organize, and interpret real number and other data in a variety of situations.
3, 4	**5.B.3**	Analyze data to make decisions and to develop convincing arguments from data displayed in a variety of

		formats that include: plots, distributions, graphs, scatter plots, diagrams, pictorial displays, charts and tables, and Venn diagrams.
3, 4	**5.B.4**	Interpret and analyze data from graphical representations and draw simple conclusions (e.g., line of best fit).
3, 4	**5.B.5**	Evaluate and defend the reasonableness of conclusions drawn from data analysis.
3, 4	**5.B.8**	Use appropriate technology to display data as lists, tables, matrices, graphs, and plots and to analyze the relationships of variables in the data displayed.
3, 4	**5.C.3**	Conduct simple experiments and/or simulations, record results in charts, tables, or graphs, and use the results to draw conclusions and make predictions.
3, 4	**5.C.4**	Compare expected results with experimental results and information used in predictions and inferences.
New Mexico Language Arts Content Standards – Grades 6 - 8		
Language Arts Standards - Grade 6		
Lesson	**Benchmark**	**Performance Standard**
All lessons	**I – A – 6**	Interact appropriately in group settings.
1, 3, 4	**I – B – 1**	Interpret and synthesize information from a variety of sources by: reviewing the characteristics of informational works, restating and summarizing information, determining the importance of information, making connections to related topics and information, monitoring comprehension, drawing inferences, and generating questions.
3, 4	**I – B – 2**	Use multiple sources of print and non-print information in developing informational materials such as brochures, newsletters, and advertisements by: exploring a variety of sources that provide information (e.g., books, newspapers, Internet, electronic databases, CD-ROMs), and distinguishing between primary and secondary sources.
3, 4	**I – B – 3**	Organize information gathered for a research topic into major components based on appropriate criteria.
1, 3, 4	**I – C – 3**	Develop and apply appropriate criteria to evaluate the quality of communication by: using knowledge of language structure and literary or media techniques, drawing conclusions based on evidence, reasons, or relevant information, and considering the implications, consequences, or impact of those conclusions.
All lessons	**I – D – 1**	Increase fluency, comprehension, and insight through meaningful and comprehensive reading instruction by: using effective reading strategies to match type of text, reading self-selected literature and other materials of individual interest, reading selections and other materials assigned, discussing selections in teacher-student discussions and small groups, and taking an active role in whole-class seminars.

1, 3, 4	**I – D – 2**	Generate questions to be answered while reading and reflect on what has been learned after reading.
All lessons	**I – D – 4**	Follow oral and written directions for a procedure.
All lessons	**II – A – 1**	Assume a variety of roles in group discussions (e.g., active listener, discussion leader, facilitator, reporter/synthesizer).
All lessons	**II – A - 2**	Clarify, illustrate, and expand upon topics in discussions.
All lessons	**II – B – 9**	Support opinions expressed with detailed evidence and with visual or media displays that use appropriate technologies.
All lessons	**II – C – 1**	Compose a variety of writings that express individual perspectives drawn from personal or related experience by: drafting, revising, editing, and proofreading own written work, using direct feedback from peers to revise content, and writing for public and private audiences.
Language Arts Standards - Grade 7		
Lesson	**Benchmark**	**Performance Standard**
All lessons	**I – A – 2**	Respond to informational materials that are read, heard, or viewed by: summarizing the information, determining the importance of the information, making connections to related topics/information, monitoring comprehension, drawing inferences, and generating questions.
All lessons	**I – B – 2**	Interpret and synthesize information by responding to information that is read, heard, or viewed.
3, 4	**I – B – 3**	Develop informational products and/or presentations that cite multiple print and non-print sources by: identifying and using appropriate primary and secondary sources, comparing, contrasting, and evaluating information from different sources about the same topic, and evaluating information for extraneous details, inconsistencies, relevant facts, and organization.
All lessons	**I – C – 2**	Refine critical thinking skills and develop criteria that evaluate arguments and judgments by: stating a firm judgment, justifying the judgment with logical, relevant reasons, clear examples, and supporting details, and creating an organizing structure appropriate to purpose, audience, and context.
All lessons	**I – D – 4**	Use knowledge of context and vocabulary to understand informational text.
All lessons	**II – A – 4**	Interact in group discussions by: offering personal opinions confidently without dominating, giving valid reasons that support opinions, and soliciting and considering others' opinions.
All lessons	**II – C - 3**	Produce research reports and technical writings that communicate information effectively to a specific audience.
Language Arts Standards - Grade 8		
Lesson	**Benchmark**	**Performance Standard**

All lessons	**I – A – 2**	Interact in group activities and/or seminars to: share personal reactions to questions raised, give reasons and cite examples from texts to support opinions, clarify, illustrate, or expand on a response, and ask classmates for similar expansion.
3, 4	**I – B – 1**	Use information for specific tasks by: analyzing and evaluating information to extend ideas, analyzing and evaluating themes and central ideas in relation to personal and societal issues, and creating a research product in both written and presentation form.
1, 3, 4	**I – B – 2**	Use images, videos, and visual representations as informational research tools.
3, 4	**I – C – 2**	Analyze the inferences and conclusions from fictional and non-fictional contexts, events, characters, settings, and themes.
All lessons	**I – D – 3**	Recognize when information presented in a text is new knowledge and describe how it can be used.
All lessons	**II – A - 2**	Create and present arguments that persuade by: engaging the audience by establishing a context, creating a persona, and developing interest, developing an idea that makes a clear and informed conclusion, arranging details, reasons, and examples persuasively, and anticipating and addressing reader/listener concerns and counter-arguments.
New Mexico Health Content Standards – Grades 5 - 8		
Lesson	**Benchmark**	**Performance Standard**
3, 4	**1.C**	Explain/Analyze how personal daily choices can affect future health status.
3, 4	**1.E**	Describe/Analyze the impact of family history, cultural values, social systems, and environmental influences on mental, emotional, social, and physical health during adolescence in the areas related to sexuality; nutrition; alcohol, tobacco, and other drug use; physical activity; personal safety; mental, social and emotional well-being.
3	**1.J**	Describe/Analyze how family, peers, media, culture, and others influence adolescent's decision making in the areas related to sexuality; nutrition; alcohol, tobacco, and other drug use; physical activity; personal safety; mental, social and emotional well-being.
4	**1.K**	Explain/Analyze how the school, religion, culture, community, society and media along with other outside influences such as federal, state or local laws, policies, etc. impact personal health decisions.
3	**2.A**	Identify/Explain the functions of school and community health resources related to sexuality; nutrition; alcohol, tobacco, and other drug use; physical activity; personal safety; mental, social and emotional well-being.

3	**2.P**	Recognize and identify professional health services in the community.
4	**4.A**	Identify and discuss/Explain how qualities of cultures (both positive and negative) in the school and community and how they contribute to health, safety and personal choices in the areas related to sexuality; nutrition; alcohol, tobacco, and other drug use; physical activity; personal safety, mental, social and emotional well-being.
4	**4.C**	Identify/Describe community and cultural factors that influence health (i.e. religion, values, habits, money, gender, ethnicity, etc.).
4	**4.D**	Compare cultural values and beliefs with personal values and beliefs and identify how they relate to health behaviors and choices in the areas related to sexuality; nutrition; alcohol, tobacco, and other drug use; physical activity; personal safety; mental; social and emotional well-being.
4	**4.F**	Identify/Explain positive and negative health messages from media and other sources in the areas related to sexuality; nutrition; alcohol, tobacco, and other drug use; physical activity; personal safety; mental; social and emotional well-being (i.e. abstinence vs. teenage sex, smoking vs. non-smoking, using a seat belt or not, healthy vs. unhealthy eating habits, etc.).
4	**7.B**	Recognize/Define and analyze information and opinions about health issues in the areas related to sexuality; nutrition; alcohol, tobacco, and other drug use; physical activity; personal safety, mental, social and emotional well-being.
4	**7.D**	Role-play how to help others make healthy choices in the areas related to sexuality; nutrition; alcohol, tobacco, and other drug use; physical activity; personal safety; mental; social and emotional well-being.